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EXAMINER	
LIGHTFOOT, ELENA TSOY	
ART UNIT	PAPER NUMBER
1792	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/564,900	NIEDERST, JEFFREY	
	Examiner	Art Unit	
	Elena Tsoy Lightfoot	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 September 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) *11-13,20 and 27-30* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,14-19,21-26 and 31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/21/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Election/Restrictions

Applicant's election without traverse of Group I, species of : a **diepoxy compound** as difunctional compound (Ai); a **sulfonium salt** as a photoinitiator (Bi); and an **epoxy compound** as a monofunctional reactive diluent (Cii), in the reply filed on September 1, 2009 is acknowledged.

Response to Amendment

Amendment filed on September 1, 2009 has been entered. New claim 31 has been added. Claims 1-31 are pending in the application. Claims 1-31 are pending in the application. Claims 11-13, 20, and 27-30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claims examined on the merits are 1-10, 14-19, 21-26, and 31.

Status Identifiers

Status Identifiers "Original" in non-elected claims 11-13, 20, and 27 should be changed to "Withdrawn".

Abstract

1. The abstract of the disclosure is objected to because it contains a minor typographical error: "An improved easily openable end for a metal container, and a**L** method of manufacturing the end are disclosed". Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation: "(d) heating the coated metal can end resulting from step (c) for about one to about five minutes at about 65.degree. C. to about 205.degree. C. for about one to about five minutes" is confusing because the meaning of a second "for about one to about five minutes" is not clear. For examining purposes the phrase was interpreted as "(d) heating the coated metal can end resulting from step (c) for about one to about five minutes at about 65^0C to about 205^0C ~~for about one to about five minutes~~".

Claim 22 recites the limitation "VM&P naphtha". According to MPEP 2173.05(u), if the trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of the 35 U.S.C. 112, second paragraph. Ex parte Simpson, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. In fact, the value of a trademark would be lost to the extent that it became descriptive of a product, rather than used as an identification of a source or origin of a product. Thus, the use of a trademark or trade name in a claim to identify or describe a material or product would not only render a claim indefinite, but would also constitute an improper use of the trademark or trade name.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-10, 18, 22-26, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over An et al (US 20020172760) in view of Watt (US 3936557).

An et al discloses a process for repairing a protective coating on converted can ends (claimed easily openable metal can end having a score line) comprising applying a radiation-curable repair agent onto at least a portion of the converted can ends; and curing the repair agent (See Abstract) by an electron beam, or by ultraviolet (UV) light (See P31). Preferably, the repair agent is a fluid formulated for curing or hardening by irradiation with electron beams (See P31). The composition may contain 1,2-epoxybutane (See column 5, lines 26-42) as a low viscosity monoepoxide in an amount of e.g. **1.3%** (Example 9), **11.1%** (Examples 10-11) or **7.1%** (Example 12).

An et al fails to teach that the radiation-curable repair agent is a radiation-curable coating composition comprising: (i) a difunctional compound, (ii) a polyfunctional reactive diluent, (iii) a cationic photoinitiator, and (iv) up to about 12%, by weight, of a monofunctional reactive diluent (Claim 1).

Watt teaches that UV-curable coating composition (See column 11, lines 9-10) comprising a blend of epoxide materials such as an epoxy prepolymer of the type of diglycidyl-bisphenol A resins (claimed difunctional compound) (See column 2, lines 53-65), polyglycidyl ethers (claimed polyfunctional reactive diluent) (See column 3, lines 56-60), blended with a low viscosity monoepoxide (claimed monofunctional reactive diluent) in limited proportions, and a cationic polymerization initiator (See Abstract) is useful for coating metal substrates due to their

superior adhesion **to metal** and excellent resistance to most solvents and chemicals (See column 11, lines 18-24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used UV-curable coating composition of Watt as UV-curable repair agent of An et al with the expectation of providing the desired *superior adhesion* to metal and excellent resistance to most solvents and chemicals, as taught by Watt, since An et al does not limit its teaching to a particular UV-curable coating composition.

As to claim 2, Watt teaches that the UV-curable coating composition applied to a steel plate may be cured by exposing to a 360-watt mercury arc at a distance of 2 inches for 2 seconds, then placing in an oven at 110^0C for 10 minutes to achieve a hard, glossy protective finish (See column 13, lines 45-57) that displays excellent adhesion to the metal plate (See column 18, lines 29-35).

As to claimed temperature, concentration, amount of radiation per square centimeter and curing time, it is well settled that where patentability is predicated upon a change in a condition of a prior art process, such as a change in *temperature*, *time*, or *concentration of reactants*, the burden is on the applicant to establish with objective evidence that the change is critical, i.e., it leads to a new, unexpected result. In re Woodruff 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990); In reAller, 220 F.2d 454, 456, 105 USPQ 233,235 (CCPA 1955).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined optimum process conditions (including those of claimed invention) in the cited prior art depending on particular application (thickness, composition, UV light power, intensity, etc.) through routine experimentation in the absence of showing of criticality.

As to claim 3, An et al teaches that the can end may be manufactured of a relatively ductile metal such as aluminum, but it may be made from **steel**, or from other acceptable materials as required (See P29).

As to claims 4, 22, 23, Watt teaches that the coating composition is essentially free of volatile solvents (See Abstract). However, it frequently is more convenient for mixing purposes to provide an ingredient already dissolved in a solvent such as *acetone* or anisole for a mixing operation (See column 9, lines 43-49).

As to claims 9-10, Watt teaches a cycloaliphatic diepoxy compound of claimed formula (See column 4, lines 12-25).

As to claim 24, it is well known in the art that viscosity of a coating composition can be adjusted depending on particular application technique. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant viscosity parameters (including those of claimed invention) in the cited prior art through routine experimentation depending on particular application technique in the absence of showing of criticality.

6. Claims 1-10, 14-19, 21-26, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over An et al '760, as applied above, and further in view of Smith (US 4256828).

An et al fails to teach that the radiation-curable repair agent is a radiation-curable coating composition comprising: (i) a difunctional compound, (ii) a polyfunctional reactive diluent, (iii) a cationic photoinitiator, and (iv) up to about 12%, by weight, of a monofunctional reactive diluent (Claim 1).

Smith teaches UV-curable composition (See column 13, lines 1-3) for the use as a protective coating for metals (See column 2, lines 62-63, 66) which are readily photocured by exposure to actinic radiation or electron beam irradiation, comprising:

(a) a first organic material having epoxide functionality greater than about 1.5 such as a mixture containing one epoxy group per molecule (claimed monofunctional reactive diluent), two epoxy groups per molecule (claimed difunctional compound), or more epoxy groups per molecule (claimed polyfunctional reactive diluent) (See column 3, lines 29-31);

(b) a second organic material having hydroxyl functionality of at least 1 (claimed polyol) such as *hydroxy-terminated polyester* (claimed polyfunctional reactive diluent) (See column 5, lines 47-48), as required by claims 14-15; and

(c) a complex salt photoinitiator selected from the group consisting of aromatic iodonium complex salts and aromatic *sulfonium* complex salts. (See column 2, lines 22-35).

When the number of equivalents of epoxide in the composition is in excess of the equivalents of hydroxyl-containing material, the cured compositions possess excellent toughness; abrasion resistance; **adhesion to metal** surfaces; and resistance to chemical attack (See column 2, lines 42-46).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used UV-curable coating composition of Smith as UV-curable repair agent of An et al with the expectation of providing the desired excellent toughness; abrasion resistance; adhesion to metal surfaces; and resistance to chemical attack, as taught by Smith, since An et al does not limit its teaching to a particular UV-curable coating composition.

As to claim 2, Smith teaches that the use of **thermal energy** after exposure to a radiation source will generally accelerate the curing reaction, and even a moderate increase in temperature may greatly accelerate cure rate (See column 13, lines 22-25). Temperature and time for thermal postcure would be determined through routine experimentation in the absence of showing of criticality.

As to claim 3, An et al teaches that the can end may be manufactured of a relatively ductile metal such as aluminum, but it may be made from **steel**, or from other acceptable materials as required (See P29).

As to claims 4, 22, 23, Smith teaches that liquid hydroxyl-containing organic materials may be combined with liquid epoxides to provide *solventless* coatings of low viscosity and excellent thermal stability; yet, the compositions can be photocured rapidly, without release of volatiles, to provide tough, flexible coatings without loss of other desirable properties (See column 2, lines 52-55). A liquid organic material to be polymerized may be used as a solvent for another liquid or solid organic material to be polymerized (See column 14, line 67 to clumn 15, line 1). However, an inert solvent may be used to aid in obtaining a solution of the materials and to aid in providing a suitable viscosity to the composition for purposes of coating. Suitable inert solvents include acetone, methylene chloride, or any solvent which does not react appreciably with the epoxide, the hydroxyl-containing material, the aromatic complex salt or the sensitizer (See column 14, lines 61-67).

As to claimed temperature, concentration, amount of radiation per square centimeter and curing time, it is well settled that where patentability is predicated upon a change in a condition of a prior art process, such as a change in *temperature*, *time*, or *concentration of reactants*, the

burden is on the applicant to establish with objective evidence that the change is critical, i.e., it leads to a new, unexpected result. In re Woodruff 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990); In reAller, 220 F.2d 454, 456, 105 USPQ 233,235 (CCPA 1955).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined optimum process conditions (including those of claimed invention) in the cited prior art depending on particular application (thickness, composition, UV light power, intensity, etc.) through routine experimentation in the absence of showing of criticality.

As to claims 8-10 and 18-19, Smith teaches that the mixture of mono-, di- and poly-epoxides include monomeric epoxy compounds and epoxides of the polymeric type and can be aliphatic, *cycloaliphatic*, aromatic or heterocyclic (See column 3, lines 8-20). In other words, the epoxide mixture includes *cycloaliphatic mono*epoxides (as required by claim 19); and cycloaliphatic diepoxides such as **3,4-epoxycyclohexylmethyl-3,4-epoxycyclohexanecarboxylat**e (See column 3, lines 51-53).

As to claims 16-17, Smith teaches that aromatic *sulfonium* complex salts include triaryl-substituted salts such as triphenylsulfonium hexalfuorophosphate (See column 12, lines 15-18) and **triphenylsulfonium hexafluoroantimonate** (See column 10, line 41).

As to claim 21, the limitations of claim 21 are described in the specification as being not subject matter of claimed invention (See P60 of Published Application).

As to claim 24, it is well known in the art that viscosity of a coating composition can be adjusted depending on particular application technique. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant viscosity parameters (including those of claimed invention) in the

cited prior art through routine experimentation depending on particular application technique in the absence of showing of criticality.

7. Claims 1-10, 14-19, 21-26, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over An et al '760, as applied above, and further in view of Koleske (US 5043221).

An et al fails to teach that the radiation-curable repair agent is a radiation-curable coating composition comprising: (i) a difunctional compound, (ii) a polyfunctional reactive diluent, (iii) a cationic photoinitiator, and (iv) up to about 12%, by weight, of a monofunctional reactive diluent (Claim 1).

Koleske teaches that UV-curable coating composition (See column 7, lines 27-29) comprising **60-89** parts by weight of a mixture of **cycloaliphatic epoxides** that contain **one** epoxy group per molecule that functions as a reactive diluent (claimed monofunctional reactive diluent) (See column 3, lines 56-57) or more epoxy groups per molecule (claimed difunctional compound), **10-35** parts by weight of a *polyether polyol* (claimed polyfunctional reactive diluent), **1-5** parts by weight of a photoinitiator such as **sulfonium salts** (claimed cationic photoinitiator) (See column 5, lines 51-52), **0-1** part by weight of a surfactant (See column 2, lines 16-37), and 1 to 15% of *polyester polyols* (See column 5, lines 24-26) may be used for obtaining conformal coating on metal substrates (See column 2, lines 13-16) having excellent adhesion to metal surfaces (See column 11, line 34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used UV-curable coating composition of Koleske as UV-curable repair agent of An et al with the expectation of providing the desired conformal coating having

excellent adhesion to metal surfaces, as taught by Koleske, since An et al does not limit its teaching to a particular UV-curable coating composition.

As to claim 2, Koleske teaches that properties are developed rapidly and cure is accomplished after the passage of seconds. Although it is not necessary to apply ***thermal energy*** *after the application of actinic energy* to complete cure, it may be advantageous to heat the exposed coating. (See column 6, lines 20-23).

As to claim 3, An et al teaches that the can end may be manufactured of a relatively ductile metal such as aluminum, but it may be made from **steel**, or from other acceptable materials as required (See P29).

As to claims 4, 22, 23, Koleske teaches that the UV-curable compositions are usually **100% solids** in nature in that they need not contain an added volatile solvent. The *viscosity* of many of the systems described herein is of such a low nature that the coating can be applied by a variety of application methods. However, if desired, an inert solvent such as 1,1,1-trichloroethane, methylene chloride, carbon tetrachloride, FREONS, perchloroethylene, **toluene,** ethoxyethyl acetate, **methyl amyl ketone**, and so on can be added to decrease viscosity and/or flow and leaching characteristics. (See column 6, lines 30-35).

As to claimed temperature, concentration, amount of radiation per square centimeter and curing time, it is well settled that where patentability is predicated upon a change in a condition of a prior art process, such as a change in *temperature*, *time*, or *concentration of reactants*, the burden is on the applicant to establish with objective evidence that the change is critical, i.e., it leads to a new, unexpected result. In re Woodruff 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990); In reAller, 220 F.2d 454, 456, 105 USPQ 233,235 (CCPA 1955).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined optimum process conditions (including those of claimed invention) in the cited prior art depending on particular application (thickness, composition, UV light power, intensity, etc.) through routine experimentation in the absence of showing of criticality.

As to claims 8-10 and 18-19, Koleske teaches that the epoxide mixture includes *cycloaliphatic mono*epoxides such as alpha-pinene monoepoxide and limonene monoepoxide (See column 3, lines 60-62); and cycloaliphatic diepoxides such as **3,4-epoxycyclohexylmethyl-3,4-epoxycyclohexanecarboxylat**e (See column 3, lines 11-12).

As to claim 21, Koleske teaches that surfactant includes a **silicone surfactant** (See column 6, lines 50-51).

8. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over An et al '760 in view of Smith '828, as applied above, and further in view of Koleske '221.

Koleske, as applied above, teaches that UV-curable coating composition for coating metal substrates comprising a mixture of cycloaliphatic epoxides that contain one or more epoxy groups per molecule, polyester polyol, a photoinitiator such as sulfonium salts may further contain **0-1** part by weight of a **silicone surfactant** (See column 6, lines 50-51).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy Lightfoot whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Friday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy Lightfoot, Ph.D.
Primary Examiner
Art Unit 1792

November 19, 2009

/Elena Tsoy Lightfoot/